

EXHIBIT A
Big Salmon Creek Watershed Implementation Project, Phase I
SCOPE OF WORK

Under direction of the Department of Fish and Game, and under the following conditions and terms, the Grantee will:

1. Implement site specific erosion control measures to protect and improve salmonid spawning and rearing habitat for coho salmon and steelhead trout in a selected section of Big Salmon Creek, tributary to the Pacific Ocean in Mendocino County, California. The objective is to save approximately 10,900 cubic yards of potential sediment delivery by treating a total of 75 current and potential sediment delivery sites including 52 stream crossings, 4 potential landslide sites and 19 other sites on 10.9 miles of active and abandoned road systems.
2. Conduct work on abandoned and seasonal roads in the Big Salmon Creek watershed beginning approximately 3.5 miles upstream from the confluence with the Pacific Ocean. The project is located in Township 15N, Range 16W, Section 4 and 6; Township 16N R16W S 1, 2, and 3; Township 16N R16W S 19, 20, 21, 27, 28, 29, 30, 31, 32, 33, 34; Township 16N R16W S 35 and 36 of the Elk 7.5 Minute U.S.G.S. Quadrangle, 39.202 N latitude and 123.6806 W longitude as depicted in Exhibit C, Project Location Map, which is attached and made part of this agreement by this reference.
3. Decommission 2.8 miles of road and 30 sites and upgrade 8.1 miles of road and 11 sites thereby saving approximately 10,900 cubic yards of sediment from delivery to Big Salmon Creek. The Grantee shall treat 52 stream crossings, including decommissioning 16 crossings, and upgrading 13 culvert crossings, and 7 wet crossings. The Grantee will treat 4 landslides from roads and landings. The Grantee will treat 24 "other" sites including, 11 ditch relief culverts, 1 spring, 6 sites of concentrated road surface drainage, and 1 bank erosion site.
4. The following road upgrading treatments will be implemented where appropriate:
 - Installation of culverts sized for the 100-year flood flow, including sufficient capacity for expected wood and sediment;
 - Installation of critical dips to eliminate diversion potential;
 - Installation of rock armored fill crossings or fords;
 - Excavation and/or armoring of inboard ditches;
 - Excavation of culvert inlets;
 - Installation of downspouts and/or rock dissipation at culvert outlets;
 - Construction of rock armored fords;
 - Installation of rolling dips;
 - Reshaping of road surfaces;
 - Removal of berms;
 - Installation of ditch relief culverts;

- rocking of road surfaces.
5. The following road decommissioning treatments will be implemented where appropriate:
 - Excavation of in-place stream crossings at locations where roads or landings were built across stream channels. This includes complete excavation of the fill, including the culvert or Humboldt log crossing so the original stream bed and side slopes are exhumed. A stream crossing excavation includes removing the culvert and the underlying and the adjacent fill material. Complete excavation of stream crossing fills, includes 100 year flood channel bottom widths and 2:1 or otherwise stable side slopes. When possible the excavated spoil will be stored at nearby stable locations where it will not erode. If there is a limited amount of stable storage locations at the excavation site the crossing fill material will be hauled off-site for storage.
 - Road surface treatments: 1) ripping of the surface of the road or landing using mechanical rippers to reduce surface runoff and improve revegetation; 2) in-place out-sloping or the excavation of unstable side cast material that could fail and deliver sediment to a stream along the outside edge of a road prism or landing and the replacement of the spoil on the roadbed against the corresponding adjacent cutbank, or in close proximity of the site; 3) exported out-sloping which involves not placing the material against the cutbank so the material is end hauled to a spoil disposal site; 4) installation of cross drains or deep water bars at 50, 75, 100 or 200 foot intervals or as necessary at springs and seeps to disperse road surface runoff. The cross road drains provide road surface drainage and prevent the collection of concentrated runoff on the former roadbed.
 6. Seeding and mulching of all exposed soils which may deliver sediment to a stream. Woody debris will be concentrated on finished slopes adjacent to stream crossings. The standard for success is 80% ground cover for broadcast planting of seed, after a period of three years.
 7. The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured.
 8. The landowner must maintain road upgrading projects for a minimum of 10 years.
 9. All crossings treated in fish bearing reaches of streams will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and DFG criteria for adult and juvenile salmonid fish passage as described in the Third Edition, Volume II, Part IX, February 2003, of the *California Salmonid Stream Habitat Restoration Manual*.
 10. Sites which are expected to erode and deliver sediment to the stream are the only locations where work will be authorized for reimbursement under the terms of this agreement. Reimbursement will not be authorized for work done to improve

aesthetics only.

11. Notify the Grant Manager a minimum of five working days before any fish bearing stream reaches are dewatered and the stream flow diverted. The notification will provide a reasonable time for Department personnel to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:
 - Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
 - The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
 - All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
 - The Grantee will provide fish relocation data to the Grant Manager on a form provided by the Department of Fish and Game.
 - Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
12. Mulching and seeding will take place as sites are completed to avoid unforeseen erosion. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings. The standard for success is 80% survival of plantings, after a period of three years.
13. All road decommissioning will be done in accordance with techniques described in the Handbook for Forest and Ranch Roads, (PWA, 1994c.) and the *California Salmonid Stream Habitat Restoration Manual*, Third Edition, Volume II, Part X, January 2004. All road decommissioning and upgrade sites and techniques shall be approved by the Grant Manager before any equipment work takes place.
14. All habitat improvements will follow techniques described in the Third Edition, January 1998, of the *California Salmonid Stream Habitat Restoration Manual*, Flosi et al and the *California Salmonid Stream Habitat Restoration Manual*, Third Edition, Volume II, Part XI, January 2004.
15. Work in flowing streams is restricted to June 15 through October 31. Actual project start and end dates, within this timeframe, are at the discretion of the Department of Fish and Game.
16. If the project will not be completed by March 31, 2012, and therefore the grantee

will be requesting an amendment for time, this request and a justification for the delay resulting in the time request must be submitted no later than December 1, 2011.

17. An annual report will be submitted each year, no later than December 1, detailing the work completed that field season. The annual report will include, but not necessarily be limited to the following where applicable:
 - Implementation start and end dates
 - Percentage of the project completed in total to date
 - Dewatering and fish relocation on DFG data sheet (to be provided by the DFG Grant Manager upon request)
 - Project start and end dates for work to be implemented the following season

The annual report will also include, on a site by site basis:

- Road length segment decommissioned or upgraded per road segment
 - Sediment spoils volume estimate per road segment
 - Upslope stream crossings decommissioned (not for fish passage)
 - Stream crossings treated to improve fish passage (number)
 - Stream crossing upgraded
 - Stream length opened for fish passage by improving stream crossings (miles)
 - Sediment volume prevented from entering the stream per crossing
 - Sediment spoils volume estimate per crossing
 - Upslope area treated (sq ft) (landslides, bank stabilization)
 - Amount of riparian area treated per site in acres
 - Number of trees planted
18. Upon completion of the project, the Grantee shall submit two hard copies of a final written report and one electronic, Microsoft Word compatible, copy on a CD. The report shall include, but not necessarily be limited to the following information:
 - Grant number
 - Project name
 - Geographic area (e.g., watershed name)
 - Location of work – show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map
 - Geospatial reference/location (lat/long is preferred – defined as point, line, or polygon)
 - Project start and end dates and the number of person hours expended
 - Total of each fund source, by line item, expended to complete the project, breaking down Grant dollars, by line item, and any other funding, including type of match (cash or in-kind service)
 - Expected benefits to anadromous salmonids from the project
 - Labeled before and after photographs of any restoration activities and techniques
 - Specific project access using public and private roads and trails, with landowner name and address

- Complete as built project description
- Report measurable metrics for the project by responding to the restoration project metrics listed below.

Habitat Protection and Restoration Projects– Reporting Metrics (HU)
(Report N/A to those that do not apply)

Habitat Projects: (all)

- Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority.
- Name the priority habitat limiting factors identified in that plan that are addressed by the project
- Type of monitoring included in the project
 - Design spec achieved
 - Fish movement/abundance
- Number of stream miles treated/affected by the project within the project boundaries.

Upland Habitat Projects (HU)

- Number of actions (road decommission / upgrade)
- Total acres of upslope area treated.
- Total miles of road treated.
- Miles of road treated for road drainage system improvements.
- Miles of road decommissioned.
- Number of cubic yards of sediment saved from entering the stream.

Fish Passage Improvement Projects (HB):

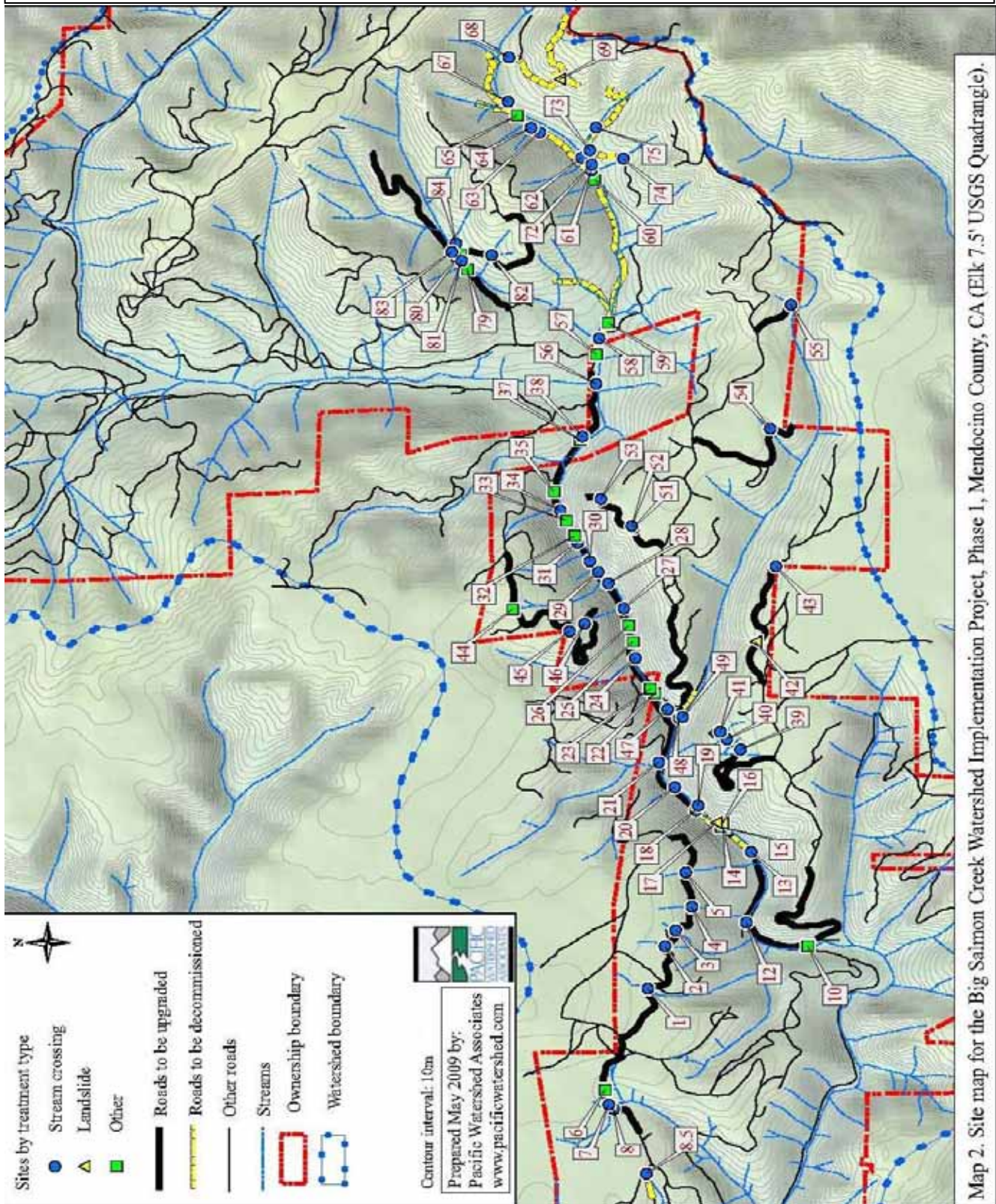
- Miles of stream treated.
- Types of crossings treated, select from: culvert, bridge or ford.
- Miles of stream made more accessible by treating stream crossings.
- Number of road crossings removed.
- Number of barriers other than culverts treated for fish passage.
- Miles of stream made more accessible by removing barriers other than culverts.

Riparian Habitat Projects (HR, HS)

- Miles of stream treated overall, count stream reach only once.
- Miles of riparian stream bank treated, measure both sides of the bank.
- Total acres of riparian area treated.
- Acres of riparian area planted.
- Species scientific names of plants planted.

19. The Grantee will acknowledge the participation of the Department of Fish and Game, Fisheries Restoration Grant funds on any signs, flyers, or other types of written communication or notice to advertise or explain the Big Salmon Creek Watershed Implementation Project, Phase I.

Exhibit C
 Big Salmon Creek Watershed Implementation Project, Phase 1
 Project Location Map
 T15N R16 W S4, 6; T16N R16W S1, 2, 3; T16N R16W S 19, 20, 21, 27, 28, 29, 30, 31, 32, 33, 34; T16N
 R17W S35, 36 Elk Quad
 Mendocino County



California Department of Fish and Game

Natural Diversity Database

Selected Elements by Common Name - Portrait

Possible Species within the Elk Quad and Surrounding Quads for:

Big Salmon Creek Watershed Implementation Project, Phase 1

T15N R16 W S4, 6; T16N R16W S1, 2, 3; T16N R16W S19, 20, 21, 27, 28, 29, 30, 31, 32, 33, 34; T16N R17W S35, 36

United States

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 Baker's goldfields <i>Lasthenia californica ssp. bakeri</i>	PDAST5L0C4			G3TH	SH	1B.2
2 Behren's silverspot butterfly <i>Speyeria zerene behrensii</i>	IILEPJ6088	Endangered		G5T1	S1	
3 Blasdale's bent grass <i>Agrostis blasdalei</i>	PMPOA04060			G2	S2.2	1B.2
4 Bolander's beach pine <i>Pinus contorta ssp. bolanderi</i>	PGPIN04081			G5T3	S3.2	1B.2
5 California red-legged frog <i>Rana draytonii</i>	AAABH01022	Threatened		G4T2T3	S2S3	SC
6 California sedge <i>Carex californica</i>	PMCYP032D0			G5	S2?	2.3
7 Coastal Brackish Marsh	CTT52200CA			G2	S2.1	
8 Coastal and Valley Freshwater Marsh	CTT52410CA			G3	S2.1	
9 Grand Fir Forest	CTT82120CA			G1	S1.1	
10 Howell's spineflower <i>Chorizanthe howellii</i>	PDPGN040C0	Endangered	Threatened	G1	S1.2	1B.2
11 Humboldt Bay owl's-clover <i>Castilleja ambigua ssp. humboldtiensis</i>	PDSCR0D402			G4T2	S2.2	1B.2
12 Lyngbye's sedge <i>Carex lyngbyei</i>	PMCYP037Y0			G5	S2.2	2.2
13 Mendocino Coast paintbrush <i>Castilleja mendocinensis</i>	PDSCR0D3N0			G2	S2.2	1B.2
14 Mendocino Pygmy Cypress Forest	CTT83161CA			G2	S2.1	
15 Mendocino leptonetid spider <i>Calileptoneta wapiti</i>	ILARAU6040			G1	S1	
16 Navarro roach <i>Lavinia symmetricus navarroensis</i>	AFCJB19023			G5T1T2	S1S2	SC
17 North Coast semaphore grass <i>Pleuropogon hooverianus</i>	PMPOA4Y070		Threatened	G1	S1.1	1B.1
18 Northern Coastal Salt Marsh	CTT52110CA			G3	S3.2	
19 Oregon coast paintbrush <i>Castilleja affinis ssp. litoralis</i>	PDSCR0D012			G4G5T4	S2.2	2.2
20 Oregon goldthread <i>Coptis laciniata</i>	PDRAN0A020			G4G5	S2.2	2.2
21 Pacific gilia <i>Gilia capitata ssp. pacifica</i>	PDPLM040B6			G5T3T4	S2.2?	1B.2
22 Pacific tailed frog <i>Ascaphus truei</i>	AAABA01010			G4	S2S3	SC
23 Point Arena mountain beaver <i>Aplodontia rufa nigra</i>	AMAF01011	Endangered		G5T1	S1	SC
24 Point Reyes checkerbloom <i>Sidalcea calycosa ssp. rhizomata</i>	PDMAL11012			G5T2	S2.2	1B.2

California Department of Fish and Game

Natural Diversity Database

Selected Elements by Common Name - Portrait

Possible Species within the Elk Quad and Surrounding Quads for:

Big Salmon Creek Watershed Implementation Project, Phase 1

T15N R16 W S4, 6; T16N R16W S1, 2, 3; T16N R16W S19, 20, 21, 27, 28, 29, 30, 31, 32, 33, 34; T16N R17W S35, 36

United States

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
25 Pomo bronze shoulderband <i>Helminthoglypta arrosa pomoensis</i>	IMGASC2033			G2G3T1	S1	
26 Siskiyou checkerbloom <i>Sidalcea malviflora ssp. patula</i>	PDMAL110F9			G5T1	S1.1	1B.2
27 Sonoma tree vole <i>Arborimus pomo</i>	AMAFF23030			G3	S3	SC
28 Sphagnum Bog	CTT51110CA			G3	S1.2	
29 ashy storm-petrel <i>Oceanodroma homochroa</i>	ABNDC04030			G2	S2	SC
30 coast fawn lily <i>Erythronium revolutum</i>	PMLIL0U0F0			G4	S3	2.2
31 coast lily <i>Lilium maritimum</i>	PMLIL1A0C0			G2	S2	1B.1
32 coastal bluff morning-glory <i>Calystegia purpurata ssp. saxicola</i>	PDCON040D2			G4T2	S2.2	1B.2
33 dark-eyed gilia <i>Gilia millefoliata</i>	PDPLM04130			G2	S2.2	1B.2
34 deceiving sedge <i>Carex saliniformis</i>	PMCYP03BY0			G2	S2.2	1B.2
35 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S2S3	SC
36 great burnet <i>Sanguisorba officinalis</i>	PDROS1L060			G5?	S2.2	2.2
37 hair-leaved rush <i>Juncus supiniiformis</i>	PMJUN012R0			G5	S2.2?	2.2
38 leafy-stemmed mitrewort <i>Mitella caulescens</i>	PDSAX0N020			G5	S4.2	4.2
39 livid sedge <i>Carex livida</i>	PMCYP037L0			G5	S1	1A
40 long-beard lichen <i>Usnea longissima</i>	NLLEC5P420			G4	S4.2	
41 lotis blue butterfly <i>Plebejus idas lotis</i>	IILEPG5013	Endangered		G5TH	SH	
42 maple-leaved checkerbloom <i>Sidalcea malachroides</i>	PDMAL110E0			G3G4	S3S4.2	4.2
43 marbled murrelet <i>Brachyramphus marmoratus</i>	ABNNN06010	Threatened	Endangered	G3G4	S1	
44 northern microseris <i>Microseris borealis</i>	PDAST6E030			G4?	S1.1	2.1
45 northern red-legged frog <i>Rana aurora</i>	AAABH01021			G4T4	S2?	SC
46 northern spotted owl <i>Strix occidentalis caurina</i>	ABNSB12011	Threatened		G3T3	S2S3	SC

California Department of Fish and Game

Natural Diversity Database

Selected Elements by Common Name - Portrait

Possible Species within the Elk Quad and Surrounding Quads for:

Big Salmon Creek Watershed Implementation Project, Phase 1

T15N R16 W S4, 6; T16N R16W S1, 2, 3; T16N R16W S19, 20, 21, 27, 28, 29, 30, 31, 32, 33, 34; T16N R17W S35, 36
United States

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
47 osprey <i>Pandion haliaetus</i>	ABNKC01010			G5	S3	
48 perennial goldfields <i>Lasthenia californica</i> ssp. <i>macrantha</i>	PDAST5L0C5			G3T2	S2.2	1B.2
49 pink sand-verbena <i>Abronia umbellata</i> ssp. <i>breviflora</i>	PDNYC010N2			G4G5T2	S2.1	1B.1
50 purple martin <i>Progne subis</i>	ABPAU01010			G5	S3	SC
51 purple-stemmed checkerbloom <i>Sidalcea malviflora</i> ssp. <i>purpurea</i>	PDMAL110FL			G5T2	S2.2	1B.2
52 pygmy cypress <i>Callitropsis pygmaea</i>	PGCUP04032			G2	S2	1B.2
53 pygmy manzanita <i>Arctostaphylos mendocinoensis</i>	PDERI04280			G1	S1?	1B.2
54 seacoast ragwort <i>Packera bolanderi</i> var. <i>bolanderi</i>	PDAST8H0H1			G4T4	S1.2	2.2
55 short-leaved evax <i>Hesperrevax sparsiflora</i> var. <i>brevifolia</i>	PDASTE5011			G4T2T3	S2S3	1B.2
56 small groundcone <i>Boschniakia hookeri</i>	PDORO01010			G5	S1S2	2.3
57 southern torrent salamander <i>Rhyacotriton variegatus</i>	AAAAJ01020			G3G4	S2S3	SC
58 steelhead - northern California ESU <i>Oncorhynchus mykiss irideus</i>	AFCHA0209Q	Threatened		G5T2Q	S2	SC
59 supple daisy <i>Erigeron supplex</i>	PDAST3M3Z0			G1	S1.1	1B.2
60 swamp harebell <i>Campanula californica</i>	PDCAM02060			G3	S3	1B.2
61 tricolored blackbird <i>Agelaius tricolor</i>	ABPBXB0020			G2G3	S2	SC
62 tufted puffin <i>Fratercula cirrhata</i>	ABNNN12010			G5	S2	SC
63 white beaked-rush <i>Rhynchospora alba</i>	PMCYP0N010			G5	S3.2	2.2
64 white-flowered rein orchid <i>Piperia candida</i>	PMORC1X050			G3	S3.2	1B.2

EXHIBIT A
Cottaneva Creek Habitat Restoration Project
Statement of Work

Under direction of the Department of Fish and Game, and under the following conditions and terms, the Eel River Watershed Improvement Group will:

1. Improve spawning and rearing habitat by increasing habitat diversity, improving pool depth and frequency, and sorting spawning gravel for coho salmon and steelhead trout in a selected section of Cottaneva Creek tributary to Pacific Ocean in Mendocino County.
2. Conduct work on Cottaneva Creek approximately 0.45 miles upstream from the confluence of South Fork Cottaneva Creek. The project is located in Township 22N, Range 18W, Sections 11, 13, 14 & 24 of the Westport and Hales Grove 7.5 Minute U.S.G.S. Quadrangles, as depicted in Exhibit C, Project Location Map, which is attached and made part of this agreement by this reference.
3. The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured.
4. A total of 15 log structures containing 75 logs will be constructed along two miles of stream. Final structure design and placement will be determined by field consultation between the Grantee and the DFG Grant Manager. Work will consist of the following:
 - Trucking logs from restoration sites upslope to staging sites along the creek. Logs selected will have root wads intact when possible
 - Using an excavator and/or hand crews wedge logs between living riparian trees, or drive them into cohesive stream banks leaving them unanchored.
 - The unanchored wood will be a minimum length of 1.5 times the bankfull width of the stream.
 - When necessary hand crews will anchor the wood with one inch threaded rebar to riparian trees.
 - Grantee will plant 1,500 mixed conifer trees in the area affected by heavy equipment access.
5. Work in flowing streams is restricted to June 15 through October 31. Actual project start and end dates, within this timeframe, are at the discretion of the Department of Fish and Game. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to ensure the best chance of survival of the seedlings. The standard for success is 80% survival of plantings, after a period of three years.
6. The Grantee shall notify the Grant Manager a minimum of five working days before any fish bearing stream reaches are dewatered and the stream flow diverted. The notification will provide a reasonable time for Department personnel to supervise the implementation

of the water diversion plan and oversee the safe removal and relocation of salmonids and other aquatic species from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:

- Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
- The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
- All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
- The Grantee will provide fish relocation data to the Grant Manager on a form provided by the Department of Fish and Game.
- Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.

7. All habitat improvements will follow techniques described in the Third Edition, January 1998, of the *California Salmonid Stream Habitat Restoration Manual*, Flosi et al. and the *California Salmonid Stream Habitat Restoration Manual*, Third Edition, Volume II, Part XI, January 2004.
8. An annual report will be submitted each year, no later than November 15, detailing the work completed that field season. The annual report will include, but not necessarily be limited to the following where applicable:
 - Construction start and end dates
 - Percentage of the project completed in total to date
 - Dewatering and fish relocation on DFG data sheet (to be provided by the DFG grant manager upon request)
 - Construction start and end dates for work to be implemented the following season
 - The annual report will also include, on a site by site basis:
 - Stream length treated in feet (count one side only)
 - Length of aquatic habitat disturbed (feet)
 - Number of instream structures installed/modified
 - Area of each structure installed within bankfull width (length x width)
 - Length of instream habitat treated excluding bank stabilization
9. Upon completion of the project, the Grantee shall submit two hard copies of a final written report and one electronic, Microsoft Word compatible, copy on CD. The report shall include, but not necessarily be limited to the following information:
 - Grant number
 - Project name
 - Geographic area (e.g., watershed name)

- Location of work – show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map
- Geospatial reference/location (lat/long is preferred – defined as point, line, or polygon)
- Project start and end dates and the number of person hours expended
- Total of each fund source, by line item, expended to complete the project, breaking down Grant dollars, by line item, and any other funding, including type of match (cash or in-kind service)
- Expected benefits to anadromous salmonids from the project
- Labeled before and after photographs of any restoration activities and techniques
- Specific project access using public and private roads and trails, with landowner name and address
- Complete as built project description
- Report measurable metrics for the project by responding to the restoration project metrics listed below.

Habitat Protection and Restoration Projects– Reporting Metrics (HI, HR, HS) (Report N/A to those that do not apply)

Habitat Projects: (all)

- Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority.
- Name the priority habitat limiting factors identified in that plan that are addressed by the project
- Type of monitoring included in the project
 - Design spec achieved
 - Fish movement/abundance
- Number of stream miles treated/affected by the project within the project boundaries.

Instream Habitat Projects (HI)

- Description of instream treatments used, including site locations referenced to an established landmark, number of treatment sites, and any modifications to site/treatment design.
- Type of materials used for channel structure placement, select from: individual logs (unanchored); logs fastened together (logjam); rocks/boulders (unanchored); rocks/boulders (fastened or anchored); stumps with roots attached (root wads); weirs; gabions; deflectors/barbs; or other engineered structures
- Miles of stream treated with channel structure placement
- Number of instream pools created by structure placement
- Number of structures placed in channel.

Riparian Habitat Projects (HR, HS)

- Number of miles treated (e.g., fenced)

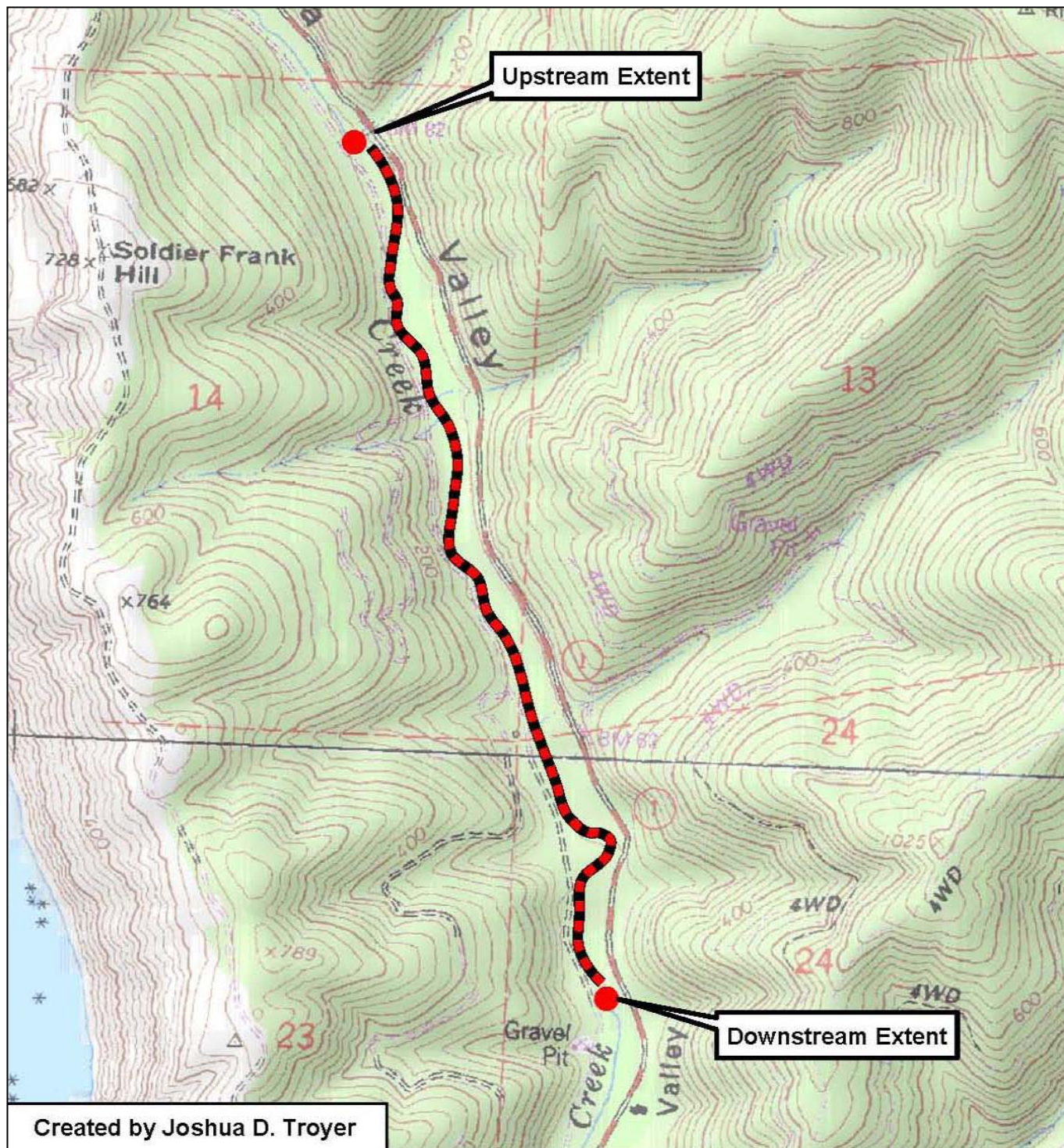
- Number of acres treated (e.g., planted)
- Number of acres and type of invasive species controlled
- Species and size of trees planted
- Number of trees/density of plantings
- Feet of stream bank stabilized and treatments used.

Water Quality Projects

- Water quality limitations addressed by the project (e.g. 303(d), TMDL)

10. The Eel River Watershed Improvement Group will acknowledge the participation of the Department of Fish and Game, Fisheries Restoration Grant funds on any signs, flyers, or other types of written communication or notice to advertise or explain the Cottaneva Creek Habitat Restoration Project.

Exhibit C
Cottoneva Creek Habitat Restoration Project
Project Location Map
T22N, R18W, S11, 13, 14 & 24, Westport and Hales Grove Quads
Mendocino County



California Department of Fish and Game
Natural Diversity Database
Selected Elements by Common Name - Portrait
723449 Cottoneva Creek Habitat Restoration Project

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 Blasdale's bent grass <i>Agrostis blasdalei</i>	PMPOA04060			G2	S2.2	1B.2
2 California floater <i>Anodonta californiensis</i>	IMBIV04020			G3Q	S2?	
3 Coastal Brackish Marsh	CTT52200CA			G2	S2.1	
4 Coastal and Valley Freshwater Marsh	CTT52410CA			G3	S2.1	
5 Cooper's hawk <i>Accipiter cooperii</i>	ABNKC12040			G5	S3	
6 Fen	CTT51200CA			G2	S1.2	
7 Grand Fir Forest	CTT82120CA			G1	S1.1	
8 Howell's spineflower <i>Chorizanthe howellii</i>	PDPGN040C0	Endangered	Threatened	G1	S1.2	1B.2
9 Humboldt milk-vetch <i>Astragalus agnicidus</i>	PDFAB0F080		Endangered	G2	S2.1	1B.1
10 Kellogg's buckwheat <i>Eriogonum kelloggii</i>	PDPGN083A0	Candidate	Endangered	G1	S1.2	1B.2
11 Lyngbye's sedge <i>Carex lyngbyei</i>	PMCYP037Y0			G5	S2.2	2.2
12 Mcdonald's rock-cress <i>Arabis macdonaldiana</i>	PDBRA06150	Endangered	Endangered	G2	S2.1	1B.1
13 Mendocino Coast paintbrush <i>Castilleja mendocinensis</i>	PDSCR0D3N0			G2	S2.2	1B.2
14 Mendocino gentian <i>Gentiana setigera</i>	PDGEN060S0			G2	S1	1B.2
15 Menzies' wallflower <i>Erysimum menziesii ssp. menziesii</i>	PDBRA160E1	Endangered	Endangered	G3?T2	S2.1	1B.1
16 North Central Coast Fall-Run Steelhead Stream	CARA2631CA			G?	SNR	
17 North Coast phacelia <i>Phacelia insularis var. continentis</i>	PDHYD0C2B1			G2T1	S1.2	1B.2
18 Northern Coastal Salt Marsh	CTT52110CA			G3	S3.2	
19 Northern Interior Cypress Forest	CTT83220CA			G2	S2.2	
20 Oregon coast paintbrush <i>Castilleja affinis ssp. litoralis</i>	PDSCR0D012			G4G5T4	S2.2	2.2
21 Oregon goldthread <i>Coptis laciniata</i>	PDRAN0A020			G4G5	S2.2	2.2
22 Pacific gilia <i>Gilia capitata ssp. pacifica</i>	PDPLM040B6			G5T3T4	S2.2?	1B.2
23 Pacific tailed frog <i>Ascaphus truei</i>	AAABA01010			G4	S2S3	SC
24 Point Reyes horkelia <i>Horkelia marinensis</i>	PDROS0W0B0			G2	S2.2	1B.2
25 Raiche's manzanita <i>Arctostaphylos stanfordiana ssp. raichei</i>	PDERI041G2			G3T2?	S2?	1B.1
26 Red Mountain catchfly <i>Silene campanulata ssp. campanulata</i>	PDCAR0U0A2		Endangered	G5T3Q	S3.2	4.2

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Common Name - Portrait
723449 Cottoneva Creek Habitat Restoration Project

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
27 Red Mountain stonecrop <i>Sedum eastwoodiae</i>	PDCRA0A1S0	Candidate		G1	S1.2	1B.2
28 Sonoma canescent manzanita <i>Arctostaphylos canescens</i> ssp. <i>sonomensis</i>	PDERI04066			G3G4T2	S2.1	1B.2
29 Sonoma tree vole <i>Arborimus pomo</i>	AMAFF23030			G3	S3	SC
30 Ten Mile shoulderband <i>Noyo intersessa</i>	IMGASC5070			G2	S2	
31 Thurber's reed grass <i>Calamagrostis crassiglumis</i>	PMPOA17070			G3Q	S1.2	2.1
32 Upland Douglas Fir Forest	CTT82420CA			G4	S3.1	
33 Whitney's farewell-to-spring <i>Clarkia amoena</i> ssp. <i>whitneyi</i>	PDONA05025			G5T2	S2.1	1B.1
34 Wolf's evening-primrose <i>Oenothera wolfii</i>	PDONA0C1K0			G1	S1.1	1B.1
35 coast fawn lily <i>Erythronium revolutum</i>	PMLIL0U0F0			G4	S3	2.2
36 coast lily <i>Lilium maritimum</i>	PMLIL1A0C0			G2	S2	1B.1
37 coastal triquetrella <i>Triquetrella californica</i>	NBMUS7S010			G1	S1.2	1B.2
38 coho salmon - central California coast ESU <i>Oncorhynchus kisutch</i>	AFCHA02034	Endangered	Endangered	G4	S2?	
39 dark-eyed gilia <i>Gilia millefoliata</i>	PDPLM04130			G2	S2.2	1B.2
40 deceiving sedge <i>Carex saliniformis</i>	PMCYP03BY0			G2	S2.2	1B.2
41 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S2S3	SC
42 globose dune beetle <i>Coelus globosus</i>	IICOL4A010			G1	S1	
43 green yellow sedge <i>Carex viridula</i> var. <i>viridula</i>	PMCYP03EM3			G5T5	S1.3	2.3
44 hoary bat <i>Lasiurus cinereus</i>	AMACC05030			G5	S4?	
45 leafy reed grass <i>Calamagrostis foliosa</i>	PMPOA170C0		Rare	G3	S3.2	4.2
46 leafy-stemmed mitrewort <i>Mitella caulescens</i>	PDSAX0N020			G5	S4.2	4.2
47 long-beard lichen <i>Usnea longissima</i>	NLLEC5P420			G4	S4.2	
48 maple-leaved checkerbloom <i>Sidalcea malachroides</i>	PDMAL110E0			G3G4	S3S4.2	4.2
49 northern goshawk <i>Accipiter gentilis</i>	ABNKC12060			G5	S3	SC

California Department of Fish and Game
Natural Diversity Database
Selected Elements by Common Name - Portrait
723449 Cottoneva Creek Habitat Restoration Project

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
50 northern red-legged frog <i>Rana aurora</i>	AAABH01021			G4T4	S2?	SC
51 northern spotted owl <i>Strix occidentalis caurina</i>	ABNSB12011	Threatened		G3T3	S2S3	SC
52 oval-leaved viburnum <i>Viburnum ellipticum</i>	PDCPR07080			G5	S2.3	2.3
53 pink sand-verbena <i>Abronia umbellata</i> ssp. <i>breviflora</i>	PDNYC010N2			G4G5T2	S2.1	1B.1
54 purple martin <i>Progne subis</i>	ABPAU01010			G5	S3	SC
55 purple-stemmed checkerbloom <i>Sidalcea malviflora</i> ssp. <i>purpurea</i>	PDMAL110FL			G5T2	S2.2	1B.2
56 robust false lupine <i>Thermopsis robusta</i>	PDFAB3Z0D0			G2Q	S2.2	1B.2
57 robust monardella <i>Monardella villosa</i> ssp. <i>globosa</i>	PDLAM180P7			G5T2	S2.2	1B.2
58 round-headed Chinese-houses <i>Collinsia corymbosa</i>	PDSCR0H060			G1	S1.2	1B.2
59 short-leaved evax <i>Hesperrevax sparsiflora</i> var. <i>brevifolia</i>	PDASTE5011			G4T2T3	S2S3	1B.2
60 southern torrent salamander <i>Rhyacotriton variegatus</i>	AAAAJ01020			G3G4	S2S3	SC
61 summer-run steelhead trout <i>Oncorhynchus mykiss irideus</i>	AFCHA0213B			G5T4Q	S2	SC
62 swamp harebell <i>Campanula californica</i>	PDCAM02060			G3	S3	1B.2
63 tidewater goby <i>Eucyclogobius newberryi</i>	AFCQN04010	Endangered		G3	S2S3	SC
64 western pearlshell <i>Margaritifera falcata</i>	IMBIV27020			G4	S2S3?	
65 western snowy plover <i>Charadrius alexandrinus nivosus</i>	ABNNB03031	Threatened		G4T3	S2	SC
66 white beaked-rush <i>Rhynchospora alba</i>	PMCYP0N010			G5	S3.2	2.2
67 white-flowered rein orchid <i>Piperia candida</i>	PMORC1X050			G3	S3.2	1B.2

Exhibit A
Ryan Creek Migration Barrier Removal Project
Statement of Work

Under direction of the Department of Fish and Game, and under the following conditions and terms, the Mendocino County Department of Transportation will:

1. The goal of this project is to re-establish fish passage for Chinook and coho salmon and steelhead trout in Ryan Creek tributary to Outlet Creek, tributary to the Eel River in Mendocino County. The objective is to provide access to 2.8 miles of habitat, to increase spawning habitat for adult salmonids and rearing habitat for juvenile salmonids by replacing a culvert with a bridge.
2. Conduct work on Ryan Creek approximately 1.0 miles upstream from the confluence of Outlet Creek. The project is located in Township 19N, Range 14W, Section 24 of the Willits 7.5 Minute U.S.G.S. Quadrangle, 39.480406 N, 123.363508 W, as depicted in Exhibit C, Project Location Map, which is attached and made part of this agreement by this reference.
3. Improve fish passage providing access to habitat for salmonids in Ryan Creek by completing the following work:
 - Design engineered plans for the bridge installation to be submitted to the Grant Manager prior to project commencement. The plans will include details of construction, scaled drawings of the culvert as well as specifics on traffic detour, water diversion and fish relocation if necessary. Prepare a bid package.
 - Implement plans for fish removal, water diversion and traffic detour.
 - Remove existing concrete box culvert and all associated fill.
 - Excavate channel to original width, depth and slope to expose natural channel morphology and armor. Side slopes will be treated to match original contours above and below the road.
 - Install a pre-manufactured Consplan bridge approximately 82 feet long and set the bridge on a concrete footing to assure structural stability. Install concrete wingwalls.
 - Treat disturbed and /or erodible stream banks at the project site with boulders and rock riprap. Any additional disturbed soils will be seeded, mulched and planted with native plants.
 - Project monitoring will consist of pre- and post project photo monitoring; pre- and post project longitudinal and thalweg surveys; and spawning surveys for adult salmonids for two years following project construction.
4. The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured.

5. The Grantee shall notify the Grant Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for Department personnel to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:
 - Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
 - The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
 - All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
 - The Grantee will provide fish relocation data to the Grant Manager on a form provided by the Department of Fish and Game.
 - Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
6. The culvert design and installation will meet flow carrying capacity required for a 100-year flood event as identified by specifications determined by NOAA Fisheries and the California Department of Fish and Game, for adult and juvenile salmonid fish passage.
7. The project will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and DFG criteria for fish passage as described in the Third Edition, Volume II, Part IX, February 2003, of the *California Salmonid Stream Habitat Restoration Manual*. Culvert replacement or modification designs shall be visually reviewed and authorized by NOAA Fisheries (or DFG) engineers prior to commencement of work.
8. All habitat improvements will follow techniques described in the Third Edition, January 1998, of the *California Salmonid Stream Habitat Restoration Manual*, Flosi et al., the *California Salmonid Stream Habitat Restoration Manual*, Third Edition, Volume II, Part XI, January 2004 and Part XII, April 2009.
9. Work in flowing streams is restricted to June 15 through October 31. Actual project start and end dates, within this timeframe, are at the discretion of the Department of Fish and Game. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings. The standard for success is 80% survival of plantings or 80% ground cover for broadcast planting of seed, after a period of three years.

10. The Grantee will maintain the new crossing, inspect the crossing in a timely manner and remove debris as necessary during the storm season.
11. Upon completion of the project, the Grantee shall submit two hard copies of a final written report and one electronic, Microsoft Word compatible, copy on a CD. If the project is not completed in the current year, the Grantee will submit a summary of the completed portion no later than December 1 and again each year until completed. The report shall include, but not necessarily be limited to the following information:
 - Grant number
 - Project name
 - Geographic area (e.g., watershed name)
 - Location of work – show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map
 - Geospatial reference/location (lat/long is preferred – defined as point, line, or polygon)
 - Project start and end dates and the number of person hours expended
 - Total of each fund source, by line item, expended to complete the project, breaking down Grant dollars, by line item, and any other funding, including type of match (cash or in-kind service)
 - Expected benefits to anadromous salmonids from the project
 - Labeled before and after photographs of any restoration activities and techniques
 - Specific project access using public and private roads and trails, with landowner name and address
 - Complete as built project description
 - Monitoring report including the pre- and post longitudinal survey and the results of the adult spawner surveys will be posted on www.5counties.org.
 - Report measurable metrics for the project by responding to the restoration project metrics listed below.

Habitat Protection and Restoration Projects– Reporting Metrics (HB) (Report N/A to those that do not apply)

Habitat Projects: (all)

- Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority.
- Name the priority habitat limiting factors identified in that plan that are addressed by the project
- Type of monitoring included in the project
 - Design spec achieved
 - Fish movement/abundance
- Number of stream miles treated/affected by the project within the project boundaries.

Fish Passage Improvement Projects (HB):

- Miles of stream treated.

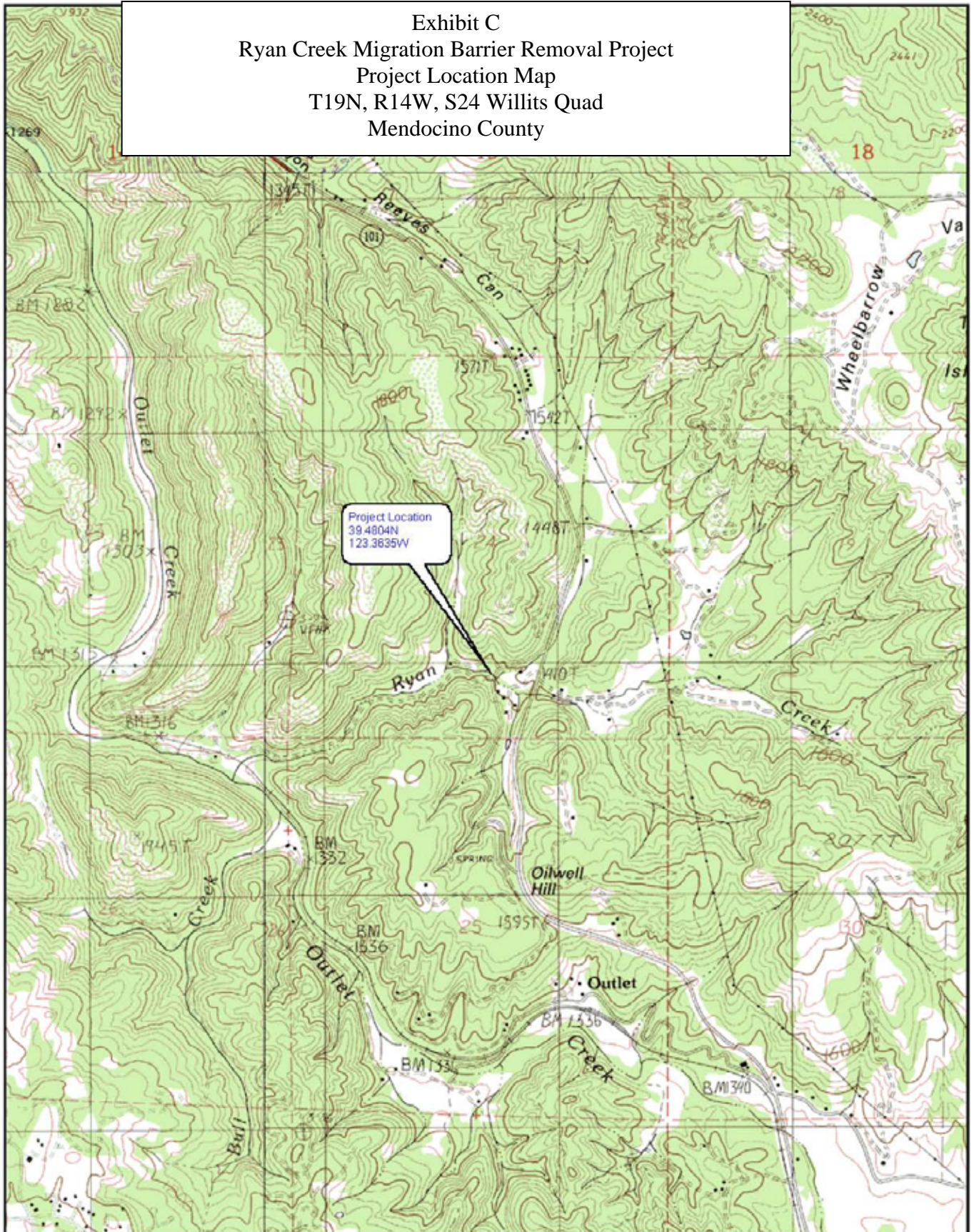
- Total number of stream crossings/culverts treated to improve fish passage.
- Type of crossing treated, select from culvert; bridge; or ford.
- Miles of stream made more accessible by treating stream crossings
- Number of culverts replaced/improved
- Number of bridges installed/improved.

Riparian Habitat Projects (HR):

- Number of miles treated (e.g., fenced)
- Number of acres treated (e.g., planted)
- Number of acres and type of invasive species controlled
- Species and size of trees planted
- Number of trees/density of plantings
- Number of feet of stream bank stabilized and treatments used.

12. The Grantee will acknowledge the participation of the Department of Fish and Game, Fisheries Restoration Grant funds on any signs, flyers, or other types of written communication or notice to advertise or explain the Ryan Creek Migration Barrier Removal Project.

Exhibit C
Ryan Creek Migration Barrier Removal Project
Project Location Map
T19N, R14W, S24 Willits Quad
Mendocino County



California Department of Fish and Game

Natural Diversity Database

Selected Elements by Common Name - Portrait

Possible species within the Willits Quad and surrounding quads for the Ryan Creek Migration Barrier Removal Project, T19N R14W Section 24, Mendocino County.

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 Sonoma tree vole <i>Arborimus pomo</i>	AMAFF23030			G3	S3	SC
2 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S2S3	SC
3 glandular western flax <i>Hesperolinon adenophyllum</i>	PDLIN01010			G2	S2.3	1B.2
4 grass alisma <i>Alisma gramineum</i>	PMALI01010			G5	S1S2	2.2
5 marbled murrelet <i>Brachyramphus marmoratus</i>	ABNNN06010	Threatened	Endangered	G3G4	S1	
6 northern spotted owl <i>Strix occidentalis caurina</i>	ABNSB12011	Threatened		G3T3	S2S3	SC
7 sharp-shinned hawk <i>Accipiter striatus</i>	ABNKC12020			G5	S3	
8 western pond turtle <i>Actinemys marmorata</i>	ARAAD02030			G3G4	S3	SC

Exhibit A
South Fork Ryan Creek Fish Passage Improvement Project
Statement of Work

Under direction of the Department of Fish and Game, and under the following conditions and terms, the Northwest California Resource Conservation & Development Council Five Counties Salmonid Conservation Program will:

1. The goal of this project is to re-establish fish passage for Chinook and coho salmon and steelhead trout in South Fork Ryan Creek tributary to Ryan Creek, tributary to Outlet Creek, tributary to the Eel River in Mendocino County. The objective is to provide access to 1.4 miles of habitat, to increase spawning habitat for adult salmonids and rearing habitat for juvenile salmonids.
2. Conduct work on South Fork Ryan Creek, crossing #2, approximately 0.1 miles upstream from the confluence of Ryan Creek. The project is located in Township 19N, Range 14W, Section 24 of the Willits 7.5 Minute U.S.G.S. Quadrangle, 38.480278 N, 122.363056 W, as depicted in Exhibit C, Project Location Map, which is attached and made part of this agreement by this reference.
3. Improve fish passage providing access to habitat for salmonids in South Fork Ryan Creek by completing the following work:
 - Design engineered plans for the culvert installation to be submitted to the Grant Manager prior to project commencement. The plans will include details of construction, scaled drawings of the culvert as well as specifics on water diversion and fish relocation if necessary. Prepare the bid package.
 - Implement plans for fish removal and water diversion.
 - Remove the existing northerly 5-foot diameter corrugated metal pipe culvert. The southerly culvert will be left in the fill and sealed.
 - Excavate channel to original width, depth and slope to expose natural channel morphology and armor.
 - Install a multi-plate bottomless arch culvert 18' wide x 10' high x 100' long. The culvert inlet and outlet will be armored as necessary. Side slopes will be treated to match original contours above and below the road.
 - Trees and root wads removed through the construction process will be installed and anchored upstream and downstream of the crossing.
 - Treat disturbed and /or erodible stream banks at the project site with boulders and rock riprap if necessary. Any additional disturbed soils will be seeded, mulched and planted with native plants.
 - Project monitoring will consist of pre- and post project photo documentation, a pre- and post project longitudinal survey, and presence / no presence adult spawner surveys for at least two years following project construction.

4. The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured.
5. The Grantee shall notify the Grant Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for Department personnel to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:
 - Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
 - The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
 - All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
 - The Grantee will provide fish relocation data to the Grant Manager on a form provided by the Department of Fish and Game.
 - Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
6. The culvert design and installation will meet flow carrying capacity required for a 100-year flood event as identified by specifications determined by NOAA Fisheries and the California Department of Fish and Game, for adult and juvenile salmonid fish passage.
7. The project will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and DFG criteria for fish passage as described in the Third Edition, Volume II, Part IX, February 2003, of the *California Salmonid Stream Habitat Restoration Manual*. Culvert replacement or modification designs shall be visually reviewed and authorized by NOAA Fisheries (or DFG) engineers prior to commencement of work.
8. All habitat improvements will follow techniques described in the Third Edition, January 1998, of the *California Salmonid Stream Habitat Restoration Manual*, Flosi et al., the *California Salmonid Stream Habitat Restoration Manual*, Third Edition, Volume II, Part XI, January 2004 and Part XII, April 2009.
9. Work in flowing streams is restricted to June 15 through October 31. Actual project start and end dates, within this timeframe, are at the discretion of the Department of Fish and Game. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings. The standard for

success is 80% survival of plantings or 80% ground cover for broadcast planting of seed, after a period of three years.

10. The Grantee will maintain the new crossing, inspect the crossing in a timely manner and remove debris as necessary during the storm season.
11. Upon completion of the project, the Grantee shall submit two hard copies of a final written report and one electronic, Microsoft Word compatible, copy on a CD. If the project is not completed in the current year, the Grantee will submit a summary of the completed portion no later than December 1 and again each year until completed. The report shall include, but not necessarily be limited to the following information:
 - Grant number
 - Project name
 - Geographic area (e.g., watershed name)
 - Location of work – show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map
 - Geospatial reference/location (lat/long is preferred – defined as point, line, or polygon)
 - Project start and end dates and the number of person hours expended
 - Total of each fund source, by line item, expended to complete the project, breaking down Grant dollars, by line item, and any other funding, including type of match (cash or in-kind service)
 - Expected benefits to anadromous salmonids from the project
 - Labeled before and after photographs of any restoration activities and techniques
 - Specific project access using public and private roads and trails, with landowner name and address
 - Complete as built project description
 - Results of the pre- and post longitudinal surveys describing adjustments to the thalweg.
 - A monitoring report that included the pre- and post project photos, the results of the longitudinal surveys and details the two years of spawner surveys will be posted on the 5C program website: www.5counties.org.
 - Report measurable metrics for the project by responding to the restoration project metrics listed below.

Habitat Protection and Restoration Projects– Reporting Metrics (HB) (Report N/A to those that do not apply)

Habitat Projects: (all)

- Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority.
- Name the priority habitat limiting factors identified in that plan that are addressed by the project
- Type of monitoring included in the project
 - Design spec achieved

- Fish movement/abundance
- Number of stream miles treated/affected by the project within the project boundaries.

Fish Passage Improvement Projects (HB):

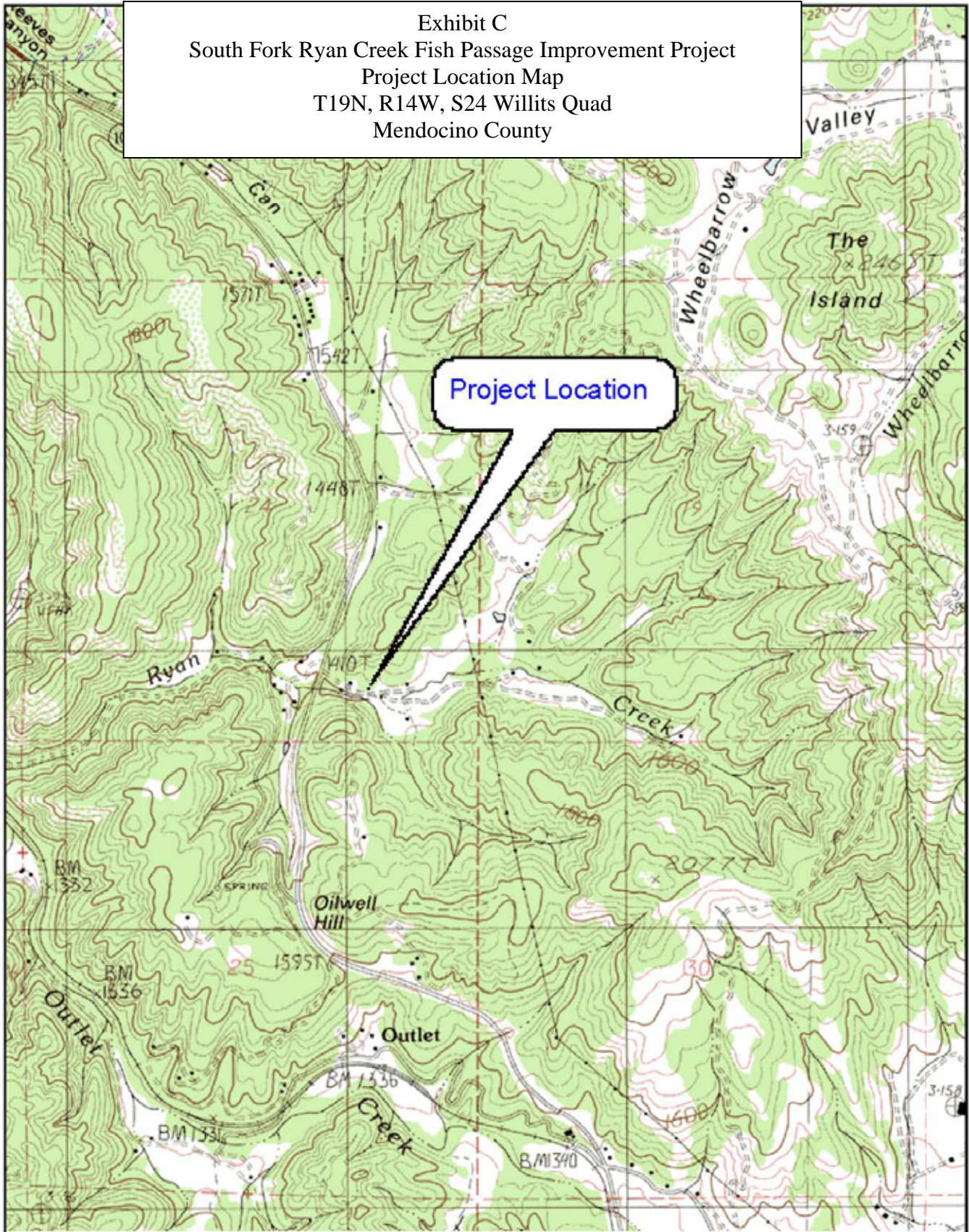
- Miles of stream treated.
- Total number of stream crossings/culverts treated to improve fish passage.
- Type of crossing treated, select from culvert; bridge; or ford.
- Miles of stream made more accessible by treating stream crossings
- Number of culverts replaced/improved
- Number of bridges installed/improved.

Riparian Habitat Projects (HR):

- Number of miles treated (e.g., fenced)
- Number of acres treated (e.g., planted)
- Number of acres and type of invasive species controlled
- Species and size of trees planted
- Number of trees/density of plantings
- Number of feet of stream bank stabilized and treatments used.

12. The Grantee will acknowledge the participation of the Department of Fish and Game, Fisheries Restoration Grant funds on any signs, flyers, or other types of written communication or notice to advertise or explain the South Fork Ryan Creek Fish Passage Improvement Project.

Exhibit C
South Fork Ryan Creek Fish Passage Improvement Project
Project Location Map
T19N, R14W, S24 Willits Quad
Mendocino County



California Department of Fish and Game

Natural Diversity Database

Selected Elements by Common Name - Portrait

Possible species within the Willits Quad and surrounding quads for the South Fork Ryan Creek Fish Passage Improvement Project, T19N R14W Section 24, Mendocino County.

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 Sonoma tree vole <i>Arborimus pomo</i>	AMAFF23030			G3	S3	SC
2 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S2S3	SC
3 glandular western flax <i>Hesperolinon adenophyllum</i>	PDLIN01010			G2	S2.3	1B.2
4 grass alisma <i>Alisma gramineum</i>	PMALI01010			G5	S1S2	2.2
5 marbled murrelet <i>Brachyramphus marmoratus</i>	ABNNN06010	Threatened	Endangered	G3G4	S1	
6 northern spotted owl <i>Strix occidentalis caurina</i>	ABNSB12011	Threatened		G3T3	S2S3	SC
7 sharp-shinned hawk <i>Accipiter striatus</i>	ABNKC12020			G5	S3	
8 western pond turtle <i>Actinemys marmorata</i>	ARAAD02030			G3G4	S3	SC

Exhibit A
Hollow Tree Creek Implementation Project, Phase V
Statement of Work

Under direction of the Department of Fish and Game, and under the following conditions and terms, the Grantee will:

1. Improve spawning and rearing habitat for coho salmon, Chinook salmon, and steelhead trout in Hollow Tree Creek, tributary to the South Fork Eel River in Mendocino County by reducing road related sediment delivery. The primary objective is to prevent 12,520 yds³ of sediment from delivery to Lower Hollow Tree Creek and its tributaries through the treatment of 45 sites along approximately 9.4 miles of road.
2. The project is located in Township 23N, Range 17W, Mount Diablo Meridian, Sections 26, 27, 28, 29, 30, 31, 32 and 33 of the Hales Grove and Leggett 7.5 Minute U.S.G.S. Quadrangles, as depicted in Exhibit B, Project Location Map, which is attached and made part of this agreement by this reference.
3. Upgrade approximately 24 sites along 6.55 miles of road including 16 stream crossings. The following treatments will be implemented where appropriate:
 - Installation of culverts sized for the 100-year flood flow, including sufficient capacity for expected wood and sediment;
 - Installation of critical dips to eliminate diversion potential;
 - Installation of rock armored fords;
 - Excavation and/or armoring of inboard ditches;
 - Excavation of culvert inlets;
 - Installation of downspouts and/or rock dissipation at culvert outlets;
 - Construction of rock armored fords;
 - Installation of rolling dips;
 - Reshaping of road surfaces;
 - Removal of berms;
 - Installation of ditch relief culverts;
 - Rocking of road surfaces;
 - Seeding and mulching of all exposed soils which may deliver sediment to a stream. The standard for success is 80% ground cover for broadcast planting of seed, after a period of three years.
4. Decommission approximately 21 sites along 2.85 miles of road including 19 stream crossings. The following treatments will be implemented where appropriate:
 - Excavation of in-place stream crossings at locations where roads or landings were built across stream channels. This includes complete excavation of the fill, including the culvert or Humboldt log crossing so the original stream bed and side slopes are exhumed. A stream crossing excavation includes removing the culvert and the underlying and the adjacent fill material. Complete excavation of stream crossing fills, includes 100 year flood channel bottom widths and 2:1 or otherwise stable side slopes. When possible the excavated spoil will be stored at nearby stable locations where it will not erode. If there is a limited amount of stable storage locations at the excavation site the crossing fill material will be hauled off-site for storage.

- Road surface treatments: 1) ripping of the surface of the road or landing using mechanical rippers to reduce surface runoff and improve revegetation; 2) in-place out-sloping or the excavation of unstable side cast material that could fail and deliver sediment to a stream along the outside edge of a road prism or landing and the replacement of the spoil on the roadbed against the corresponding adjacent cutbank, or in close proximity of the site; 3) exported out-sloping which involves not placing the material against the cutbank so the material is end hauled to a spoil disposal site; 4) installation of cross drains or deep water bars at 50, 75, 100 or 200 foot intervals or as necessary at springs and seeps to disperse road surface runoff. The cross road drains provide road surface drainage and prevent the collection of concentrated runoff on the former roadbed.
 - Seeding and mulching of all exposed soils which may deliver sediment to a stream. Woody debris will be concentrated on finished slopes adjacent to stream crossings. The standard for success is 80% ground cover for broadcast planting of seed, after a period of three years.
5. Specific treatment prescriptions for each feature are described in Exhibit D, Table 1 "Treatments" which is attached and made part of this agreement by this reference.
 6. The Grantee will not proceed with on the ground implementation until all necessary permits and consultations are secured.
 7. The landowner must maintain road upgrading projects for a minimum of 10 years.
 8. The Grantee shall notify the Grant Manager a minimum of five working days before the project site is de-watered and the stream flow diverted. The notification will provide a reasonable time for Department personnel to supervise the implementation of the water diversion plan and oversee the safe removal and relocation of salmonids and other fish life from the project area. If the project requires dewatering of the site, and the relocation of salmonids, the Grantee will implement the following measures to minimize harm and mortality to listed salmonids:
 - Fish relocation and dewatering activities shall only occur between June 15 and October 31 of each year.
 - The Grantee shall minimize the amount of wetted stream channel dewatered at each individual project site to the fullest extent possible.
 - All electrofishing shall be performed by a qualified fisheries biologist and conducted according to the National Marine Fisheries Service, Guidelines for Electrofishing Waters Containing Salmonids Listed under the Endangered Species Act, June 2000.
 - The Grantee will provide fish relocation data to the Grant Manager on a form provided by the Department of Fish and Game.
 - Additional measures to minimize injury and mortality of salmonids during fish relocation and dewatering activities shall be implemented as described in Part IX, pages 52 and 53 of the *California Salmonid Stream Habitat Restoration Manual*.
 9. Stream crossing designs and installations will meet flow carrying capacity required for a 100-year flood event as identified by specifications determined by NOAA Fisheries and the California Department of Fish and Game, for adult and juvenile salmonid fish passage.
 10. Crossings installed on fish bearing streams will follow the National Marine Fisheries Service (NMFS 2001) Guidelines for Salmonid Passage at Stream Crossings and DFG criteria for fish passage as described in the Third Edition, Volume II, Part IX, February 2003, of the *California*

Salmonid Stream Habitat Restoration Manual. Designs shall be visually reviewed and authorized by NOAA Fisheries (or DFG) engineers prior to commencement of work.

11. All habitat improvements will be in accordance with techniques described in the Third Edition, January 1998, of the *California Salmonid Stream Habitat Restoration Manual*.
12. Work in flowing streams is restricted to June 15 through October 31. Actual project start and end dates, within this timeframe, are at the discretion of the Department of Fish and Game. Planting of tree seedlings will take place after December 1 or when sufficient rainfall has occurred to insure the best chance of survival of the seedlings. The standard for success is 80% survival of plantings or 80% ground cover for broadcast planting of seed, after a period of three years.
13. If the project will not be completed by March 31, 2012, and therefore the grantee will be requesting an amendment for time, this request and a justification for the delay resulting in the time request must also be submitted no later than December 1, 2011.
14. An annual report will be submitted each year, no later than November 15, detailing the work completed that field season. The annual report will include, but not necessarily be limited to the following where applicable:
 - Grant number;
 - Project name;
 - Geographic area (e.g., watershed name);
 - Location of work – show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map;
 - implementation start and end dates;
 - as built project description;
 - percentage of the project completed to date;
 - dewatering and fish relocation data on DFG data sheet (to be provided by the DFG Grant Manager upon request);
 - projected start and end dates for work to be implemented the following season.

The annual report will also include, on a site by site basis:

- road length upgraded;
- number of stream crossings upgraded;
- number of landslides/fillslope failures treated;
- area (ft²) of landslide/fillslope failure treatments;
- road length decommissioned;
- number of stream crossings decommissioned;
- stream crossings treated for fish passage;
- length of stream habitat made accessible by fish passage treatment;
- sediment savings;
- spoils volumes;
- number of stream bank sites treated;
- length of stream bank protected or stabilized;
- instream habitat structures constructed;
- area of feature installed within bankfull width;
- number of stream blockages removed or made passable;
- number of miles made accessible to salmonids;

- number of trees planted;
 - area treated with planting.
15. Upon completion of the project, the Grantee shall submit two hard copies of a final written report and one electronic, Microsoft Word compatible, copy on CD. The report shall include, but not necessarily be limited to the following information:
- Grant number;
 - Project name;
 - Geographic area (e.g., watershed name);
 - Location of work – show project location using U.S.G.S. 7.5 minute topographical map or appropriately scaled topographical map;
 - Geospatial reference/location (lat/long is preferred – defined as point, line, or polygon)
 - Project start and end dates and the number of person hours expended;
 - Total of each fund source, by line item, expended to complete the project, breaking down Grant dollars, by line item, and any other funding, including type of match (cash or in-kind service);
 - Expected benefits to anadromous salmonids from the project;
 - Labeled before and after photographs of any restoration activities and techniques;
 - Specific project access using public and private roads and trails, with landowner name and address;
 - Complete as built project description;
 - Report measurable metrics for the project by responding to the restoration project metrics listed below.

Habitat Protection and Restoration Projects– Reporting Metrics (Report N/A to those that do not apply)

Habitat Projects: (all)

- Identify the watershed/sub-basin plan or assessment in which the project is identified as a priority.
- Name the priority habitat limiting factors identified in that plan that are addressed by the project
- Type of monitoring included in the project
 - Design spec achieved
 - Fish movement/abundance
- Number of stream miles treated/affected by the project within the project boundaries.

Upland Habitat Projects (HU)

- Number of actions (road decommission / upgrade)
- Total acres of upslope area treated.
- Total miles of road treated.
- Miles of road treated for road drainage system improvements.
- Miles of road decommissioned.
- Number of cubic yards of sediment saved from entering the stream.

Fish Passage Improvement Projects (HB):

- Miles of stream treated.
- Types of crossings treated, select from: culvert, bridge or ford.
- Miles of stream made more accessible by treating stream crossings.

- Number of road crossings removed.
- Number of barriers other than culverts treated for fish passage.
- Miles of stream made more accessible by removing barriers other than culverts.

Riparian Habitat Projects (HR, HS)

- Miles of stream treated overall, count stream reach only once.
- Miles of riparian stream bank treated, measure both sides of the bank.
- Total acres of riparian area treated.
- Acres of riparian area planted.
- Species scientific names of plants planted.

16. The Grantee will acknowledge the participation of the Department of Fish and Game, Fisheries Restoration Grant funds on any signs, flyers, or other types of written communication or notice to advertise or explain the Hollow Tree Creek Implementation Project, Phase V.

Exhibit B
Hollow Tree Creek Implementation Project, Phase V
Project Location Map

T 23N, R 17W, Mount Diablo Meridian, S 26, 27, 28, 29, 30, 31, 32 and 33
Hales Grove and Leggett Quads – Mendocino County

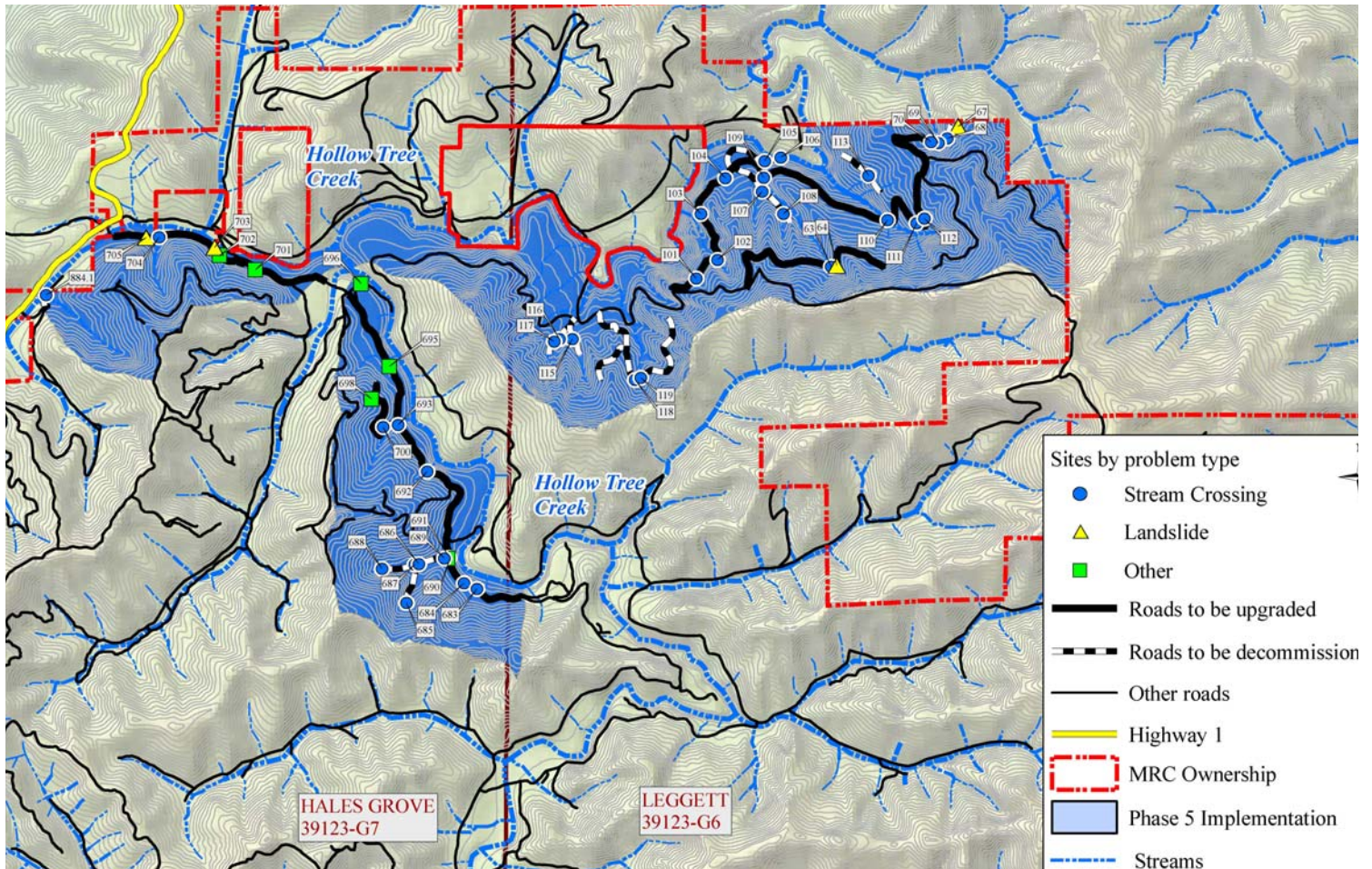


Exhibit D
Hollow Tree Creek Implementation Project, Phase V
Table 1 - Treatments

	Treatment type	No.	Comments
Site specific treatments	Culvert (install)	3	Install a culvert at an unculverted fill. (<i>Site no:</i> 63, 104, 700)
	Culvert (replace)	9	Replace an undersized or damaged culvert. (<i>Site no:</i> 101, 102, 103, 110, 112, 683, 684, 692, 704)
	Repair culvert	1	At 1 site, repair culvert. (<i>Site no:</i> 691)
	Trash rack	4	Install at culvert inlets to prevent plugging. (<i>Site no:</i> 112, 691, 693, 698)
	Critical dip	9	Install to prevent stream diversions. (<i>Site no:</i> 101, 102, 103, 104, 111, 683, 684, 693, 700)
	Soil excavation	36	At 36 sites, excavate and remove a total of 6,662 yd ³ of sediment, primarily at fillslopes and stream crossings. (<i>Site no:</i> 64, 67, 68, 69, 70, 101, 102, 103, 104, 105, 107, 108, 109, 110, 112, 113, 115, 116, 117, 118, 119, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 700, 703, 704, 705, 884.1)
	Rock (armor)	6	At 6 sites, add a total of 200 yd ³ of rock armor on outboard stream-crossing fillslopes. (<i>Site no:</i> 101, 102, 103, 109, 111, 112)
	Decommission Crossing	19	Permanently excavate stream crossing fill at 19 sites. (<i>Site no:</i> 68, 69, 70, 105, 106, 107, 108, 113, 115, 116, 117, 118, 119, 685, 686, 687, 688, 689, 884.1)
Road treatments	Other treatment	1	At 1 site, cut end of culvert with a torch. (<i>Site no:</i> 111)
	Berm (remove)	8	At 8 sites, remove a total of 3,856 ft of berm to improve road-surface drainage.
	Rolling dip	80	Install to improve road drainage.
	Ditch (clean or cut)	4	At 4 sites, clean or cut ditch for a total of 700 ft.
	Inslope road	1	At 1 site, inslope road for a total of 150 ft of road to improve road-surface drainage.
	Outslope road and remove ditch	2	At 2 sites, outslope road and remove ditch for a total of 1,600 ft of road to improve road-surface drainage.
	Outslope road and retain ditch	12	At 12 sites, outslope road and retain ditch for a total of 9,610 ft of road to improve road-surface drainage.
	Ditch relief culvert (install or replace)	30	Install or replace ditch relief culverts to improve road surface drainage.
	Rock (road surfaces)	62	At 62 sites, use a total of 1,721 yd ³ of road rock to rock the road surface at 5 stream culvert installations, 1 critical dip, 29 DRC installations, 16 rolling dips, and 9,460 ft of outslope and retain ditch.

California Department of Fish and Game

Natural Diversity Database

Selected Elements by Common Name - Portrait

Possible Species within the Hales Grove, Leggett and Surrounding Quads for:

Hollow Tree Creek Implementation Project, Phase V

T 23N, R 17W, Mount Diablo Meridian, S 26, 27, 28, 29, 30, 31, 32 and 33 - Mendocino County

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
1 Blasdale's bent grass <i>Agrostis blasdalei</i>	PMPOA04060			G2	S2.2	1B.2
2 Butte County morning-glory <i>Calystegia atriplicifolia ssp. buttensis</i>	PDCON04012			G5T3	S3	4.2
3 California floater <i>Anodonta californiensis</i>	IMBIV04020			G3Q	S2?	
4 Cooper's hawk <i>Accipiter cooperii</i>	ABNKC12040			G5	S3	
5 Humboldt milk-vetch <i>Astragalus agnicidus</i>	PDFAB0F080		Endangered	G2	S2.1	1B.1
6 Kellogg's buckwheat <i>Eriogonum kelloggii</i>	PDPGN083A0	Candidate	Endangered	G1	S1.2	1B.2
7 Mcdonald's rock-cress <i>Arabis macdonaldiana</i>	PDBRA06150	Endangered	Endangered	G2	S2.1	1B.1
8 Mendocino Coast paintbrush <i>Castilleja mendocinensis</i>	PDSCR0D3N0			G2	S2.2	1B.2
9 Mendocino gentian <i>Gentiana setigera</i>	PDGEN060S0			G2	S1	1B.2
10 North Central Coast Fall-Run Steelhead Stream	CARA2631CA			G?	SNR	
11 North Coast semaphore grass <i>Pleuropogon hooverianus</i>	PMPOA4Y070		Threatened	G1	S1.1	1B.1
12 Northern Interior Cypress Forest	CTT83220CA			G2	S2.2	
13 Nuttall's ribbon-leaved pondweed <i>Potamogeton epihydrus ssp. nuttallii</i>	PMPOT03081			G5T5	S2.2?	2.2
14 Oregon coast paintbrush <i>Castilleja affinis ssp. litoralis</i>	PDSCR0D012			G4G5T4	S2.2	2.2
15 Oregon goldthread <i>Coptis laciniata</i>	PDRAN0A020			G4G5	S2.2	2.2
16 Pacific gilia <i>Gilia capitata ssp. pacifica</i>	PDPLM040B6			G5T3T4	S2.2?	1B.2
17 Pacific tailed frog <i>Ascaphus truei</i>	AAABA01010			G4	S2S3	SC
18 Point Reyes horkelia <i>Horkelia marinensis</i>	PDROS0W0B0			G2	S2.2	1B.2
19 Raiche's manzanita <i>Arctostaphylos stanfordiana ssp. raichei</i>	PDERI041G2			G3T2?	S2?	1B.1
20 Red Mountain catchfly <i>Silene campanulata ssp. campanulata</i>	PDCAR0U0A2		Endangered	G5T3Q	S3.2	4.2
21 Red Mountain stonecrop <i>Sedum eastwoodiae</i>	PDCRA0A1S0	Candidate		G1	S1.2	1B.2
22 Sonoma canescent manzanita <i>Arctostaphylos canescens ssp. sonomensis</i>	PDERI04066			G3G4T2	S2.1	1B.2
23 Sonoma tree vole <i>Arborimus pomo</i>	AMAFF23030			G3	S3	SC

California Department of Fish and Game

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Hollow Tree Creek Implementation Project, Phase V

T 23N, R 17W, Mount Diablo Meridian, S 26, 27, 28, 29, 30, 31, 32 and 33 - Mendocino County

Common Name/Scientific Name	Element Code	Federal Status	State Status	GRank	SRank	CDFG or CNPS
24 Upland Douglas Fir Forest	CTT82420CA			G4	S3.1	
25 Whitney's farewell-to-spring <i>Clarkia amoena ssp. whitneyi</i>	PDONA05025			G5T2	S2.1	1B.1
26 coast fawn lily <i>Erythronium revolutum</i>	PMLIL0U0F0			G4	S3	2.2
27 coho salmon - central California coast ESU <i>Oncorhynchus kisutch</i>	AFCHA02034	Endangered	Endangered	G4	S2?	
28 foothill yellow-legged frog <i>Rana boylei</i>	AAABH01050			G3	S2S3	SC
29 giant fawn lily <i>Erythronium oregonum</i>	PMLIL0U0C0			G5	S2.2	2.2
30 grass alisma <i>Alisma gramineum</i>	PMALI01010			G5	S1S2	2.2
31 leafy reed grass <i>Calamagrostis foliosa</i>	PMPOA170C0		Rare	G3	S3.2	4.2
32 leafy-stemmed mitrewort <i>Mitella caulescens</i>	PDSAX0N020			G5	S4.2	4.2
33 long-beard lichen <i>Usnea longissima</i>	NLLEC5P420			G4	S4.2	
34 maple-leaved checkerbloom <i>Sidalcea malachroides</i>	PDMAL110E0			G3G4	S3S4.2	4.2
35 marbled murrelet <i>Brachyramphus marmoratus</i>	ABNNN06010	Threatened	Endangered	G3G4	S1	
36 northern goshawk <i>Accipiter gentilis</i>	ABNKC12060			G5	S3	SC
37 northern spotted owl <i>Strix occidentalis caurina</i>	ABNSB12011	Threatened		G3T3	S2S3	SC
38 oval-leaved viburnum <i>Viburnum ellipticum</i>	PDCPR07080			G5	S2.3	2.3
39 pink sand-verbena <i>Abronia umbellata ssp. breviflora</i>	PDNYC010N2			G4G5T2	S2.1	1B.1
40 robust false lupine <i>Thermopsis robusta</i>	PDFAB3Z0D0			G2Q	S2.2	1B.2
41 robust monardella <i>Monardella villosa ssp. globosa</i>	PDLAM180P7			G5T2	S2.2	1B.2
42 southern torrent salamander <i>Rhyacotriton variegatus</i>	AAAAJ01020			G3G4	S2S3	SC
43 summer-run steelhead trout <i>Oncorhynchus mykiss irideus</i>	AFCHA0213B			G5T4Q	S2	SC
44 western pearlshell <i>Margaritifera falcata</i>	IMBIV27020			G4	S2S3?	
45 western pond turtle <i>Actinemys marmorata</i>	ARAAD02030			G3G4	S3	SC
46 white-flowered rein orchid <i>Piperia candida</i>	PMORC1X050			G3	S3.2	1B.2